

Evolving concepts in lung carcinogenesis.

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Funding Grants: Stem Cells in Lung Cancer

Public Summary:

This review article highlights our current understanding of how lung cancer develops. It deals with lung cancer stem cells, the link between inflammation of the airways and lung cancer and known genetic and epigenetic changes found in lung cancer.

Scientific Abstract:

Lung carcinogenesis is a complex, stepwise process that involves the acquisition of genetic mutations and epigenetic changes that alter cellular processes, such as proliferation, differentiation, invasion, and metastasis. Here, we review some of the latest concepts in the pathogenesis of lung cancer and highlight the roles of inflammation, the "field of cancerization," and lung cancer stem cells in the initiation of the disease. Furthermore, we review how high throughput genomics, transcriptomics, epigenomics, and proteomics are advancing the study of lung carcinogenesis. Finally, we reflect on the potential of current in vitro and in vivo models of lung carcinogenesis to advance the field and on the areas of investigation where major breakthroughs will lead to the identification of novel chemoprevention strategies and therapies for lung cancer.

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